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waged over the disputed originality of invention of the high explosive 'cordite,' Mr. Hiram Maxim, one of the contestants, and one in whom his fellow-countrymen in the United States feel much interest, is, for the time at least, defeated. Referring to this important case, one of the English technical journals, *Industries and Iron*, makes the following remarks: "The appeal of the Maxim-Nordenfelt Guns and Ammunition Company against the judgment delivered by Mr. Justice Wright in the Cordite case has been, as was generally anticipated would prove to be the case, against the appellants. The judgment of the Court was couched in somewhat uncompromising language, and it is doubtful whether the Maxim-Nordenfelt Company will consider it advantageous to carry the matter any further. Although the Court is no doubt perfectly right in its definition of the nature of the invention comprised in Mr. Maxim's patent, as against that of Sir Frederick Abel and Professor Dewar, none can deny the fact that Mr. Maxim was the undoubted pioneer in smokeless powders as we now know them, and it will be conceded by most that the recent decision involves a certain degree of hardship. Mr. Maxim's invention of a smokeless powder was not an accidental discovery; he was forced into the course of the investigation he took up by the necessity of procuring a powder which would be suitable for the rapid-firing gun which he had invented. He found that the use of the ordinary powder practically destroyed the utility of his gun, by surrounding it with such clouds of smoke that it was impossible to take aim. Mr. Maxim then deliberately set himself to the purpose of producing a powder which should be almost, if not altogether, smokeless. In this he was absolutely successful, and he has only shared the fate of many other inventors in seeing the fruits of his invention taken away from him through legal technicalities."

A FOREIGN exchange makes the following very unequivocal statement relative to our later systems of procedure in the Patent Office. A recent change in the law prevents any such delay, whether intended or otherwise on the part either of the holders of the patent or of the officer of the Patent Office: "The amazing circumstances which characterized the issue of the Berliner patent, to which is due the controlling interest in the United States of the Bell Telephone Company, have been paralleled by the well-known Bradley patents, which are now creating a good deal of stir among the manufacturers of aluminium and carbide of calcium. In the former case, the patent lay in the Patent Office for a period of no less than thirteen years before it was formally issued to the public. The Bradley patents were similarly interred for nine years before they were resurrected for the purpose of being used against the Pittsburg Reduction Company. It must be a gratifying reflection to those interested in patents and inventions in the United States that the singular course of procedure suggested by the foregoing instances will not be allowed to characterize the American Patent Office much longer. On January next the new regulations come into force, by which it is enacted that the issue of a patent shall be compulsory within a certain definite period from the date of application; and, under these circumstances, it seems likely that the familiar legend 'Patent applied for' on American manufactures will shortly become effete."

R. H. T.

SCIENTIFIC NOTES AND NEWS.

IN view of the International Congresses of Geology and Medicine, meeting in Moscow during the present month, the tenth meeting of Russian men of science and physicians, which was to have been held at Kief during the same month, has been postponed until 1898.

THE President of the local executive commit-

tee of the British Association for the Advancement of Science announces that McMaster University, a college residence, has been selected as the headquarters of the American Physiological Society during the Toronto meeting of the British Association. Rooms and board may be obtained there at \$1.50 to \$2.00 per day.

THE French Association for the Advancement of Science will meet next year at Nantes. At the meeting being held this week at St. Étienne the public lecture was to have been given by M. Gariel, on the Röntgen rays. Subjects proposed for special discussion were: Section of Physics, 'Atmospheric Electricity;' Section of Meteorology, 'The Study of Clouds;' Section of Geology, 'The Formation of the Fossiliferous Basins of the Central Plateau;' Section of Hygiene, 'The Part played by Leaves of Absence from School in the Spread of Contagious Diseases.'

A MEETING of the Council of the Australasian Association for the Advancement of Science was held at the Royal Society's House, Sydney, on June 17th, with fifteen members in attendance. Letters were read from the Royal Society of Tasmania, the Melbourne Branch of the Royal Geographical Society and the Medical Society of Queensland, suggesting a memorial to the late Baron von Müller. A preliminary committee was appointed to make arrangements for the meeting to be held at Sydney in January next. A large number of papers have been promised for the several sections; Section G., Economic Science and Agriculture, leading with twenty-eight papers, followed by Section F., Ethnology and Anthropology, and Section J., Mental Science and Education, each with eighteen papers.

JAMES HAMMOND TRUMBULL, LL.D., the well-known philologist, died in Hartford, Conn., August 5th, aged seventy-six years. For many years he paid especial attention to the subject of the Indian languages of North America. He was a member of the National Academy of Sciences and of many other learned societies.

WE regret also to record the death of Captain Bertram Lutley Selater, son of the eminent zoologist, who died at Zanzibar on July 24th,

at the age of thirty-one years, of fever contracted while making surveys and explorations in British Central Africa; of Dr. Golowkinskie, formerly professor of mineralogy and geology in the Universities of Kasan and Odessa, at Kastel, on June 9th, and of M. Étienne Vacherot, formerly professor of philosophy and assistant to Cousin, and the author of numerous contributions to philosophy, political economy and science, at the age of eighty-six years. M. Vacherot took a prominent part in French politics, having been one of the Mayors of Paris during the siege.

DR. WILHELM THIERRY PREYER, whose death we recently noticed, was a man of unusual versatility and originality. He was born in Manchester, England, in 1841, and received his education in that country until he was sixteen years old. After studying at various German universities and at Paris, he qualified as docent in the University of Bonn, first in zoology and afterwards in physiology. His first work was in zoology, and he published several books treating of problems in which zoology and physiology are both concerned, such as 'The Struggle for Existence' (1869), 'Hypotheses regarding the Origin of Life' (1875), and 'Spontaneous Generation and the Conception of Life' (1879). In 1869 Preyer was made professor of physiology at Jena, but removed to Berlin in 1880 and qualified as docent in the University. He was not promoted to a professorship at Berlin and removed to Wiesbaden in 1893. In addition to the works mentioned above, Preyer wrote numerous articles and at least two volumes concerning the general problems of science, partly of a popular character. He published an 'Elements of General Physiology' in 1883 and had earlier published a book on the 'Five Senses of Man,' translated into English in the International Scientific Series. He also made many contributions to the physiology of the senses and to experimental psychology, and was one of the Board of Editors of the *Zeitschrift für Psychologie*. His volume on 'The Child's Mind' (1879) has been the starting point of numerous similar observations, though it is interesting to note that the first scientific biography of a child was written by Darwin. Preyer's versatility is

further illustrated by the fact that his last volume was on graphology.

THE statue of Darwin at the entrance to the public library and museum of Shrewsbury, to the erection of which, by the Shropshire Horticultural Society, we have already called attention, was to have been unveiled on August 10th. The statue, in bronze, is by Mr. Horace Montford.

ON the eleventh of July a monument was unveiled at Bresches to Velpeau, the eminent French surgeon.

A MEDALLION portrait of Pasteur, by M. Patey, after the medal by M. Roty, has now been placed on the wall of the École Normale Supérieure, the site of the former laboratory of Pasteur. The inscription previously inscribed on the tablet reads:

ICI FUT LE LABORATOIRE DE PASTEUR.
1857.—Fermentations.
1860.—Génération spontanée.
1865.—Maladies des vins et des bières.
1868.—Maladies des vers à soie.
1881.—Virus et vaccins.
1885.—Prophylaxie de la rage.

THE position of Assistant Chief of Division of Soils, Department of Agriculture, salary \$1,800 per annum, is to be filled by the Civil Service Commission. Applicants must submit, not later than September 1st, original essays, either printed or in manuscript form, consisting of not less than 5,000 words, and containing a thorough treatment of the subject, 'Environment as affecting the yield, quality and time of ripening of crops.'

DR. JOHANNES MARTIN has been appointed Director of the Natural History Museum of Oldenburg, and Dr. Philippi, assistant in the Natural History Museum in Berlin.

THE Prince of Wales has been elected a fellow of the Royal College of Physicians, London, or, as the English papers put it, he has complimented the profession by accepting the fellowship. As a non-medical fellow, the Prince has only three predecessors, the Marquis of Dorchester in 1658, the Duke of Manchester in 1717, and the Duke of Richmond in 1729.

THE Legislature of Uruguay has conferred honorary citizenship and the sum of \$10,000 on

Dr. Sanarelli as a recognition of his discovery of the yellow fever microbe.

THE Faculty of Philosophy of the University of Strasburg has conferred the honorary degree of Doctor of Philosophy upon Professor Flinders Petrie, the celebrated Egyptologist.

AT the annual general meeting of the British Medical Association, on July 27th, the gold medals for distinguished merit were awarded to Sir Walter Foster and Mr. C. G. Wheelhouse. The Stewart prize was awarded to Dr. G. S. Woodhead, and the Middlemore prize to Dr. Alexander Hill Griffith.

THE Yerkes Observatory of the University of Chicago will be dedicated on October 1st. The program is not yet announced, but it is planned to hold a series of conferences as part of the ceremonies, and it is hoped that a large number of astronomers and other men of science will be present.

REPLYING recently to a committee asking for the earlier opening of Kew Gardens, Mr. Akers-Douglas said the *raison d'être* of the existence of Kew Gardens was the valuable scientific work it did, and he could not be expected to do anything in the way of extending the hours during which the Gardens were open to the general public if it would interfere with that work. The financial question did not weigh with him at all, for if he were convinced that the interests of science would not suffer by the earlier opening he should endeavor to persuade the Treasury to grant any extra money required. The sole question for consideration was whether the interests of science could be combined with the desire of the people for the earlier opening, and he regretted to say that the scientific men whose opinions he had obtained were entirely opposed to the proposal. From a scientific point of view the experiment had not been a success in Edinburgh, and they had no reason to anticipate any better result at Kew.

WE have published several notices of the expedition in Central Asia under the direction of the Swedish traveler, Dr. Sven Hedin. He is now preparing the results of his explorations for publication, and is expected to present these before the Royal Geographical Society of London

early in the autumn. The Russian Geographical Society will confer its gold medal upon him.

It is stated in *Natural Science* that under the directorship of Dr. T. Kochibe, the Geological Survey of Japan has been making good progress, and the staff has been increased. There has for some time been accumulating a collection chiefly illustrative of practical geology, and it is now proposed to build a proper geological museum in Tokyo. A short time ago some valuable phosphatic beds of Tertiary age were discovered along the northeast shore of the province of Kyushu, and Dr. Tsuneto, of the Agronomic division of the Survey, has been experimenting with the material so as to make it available for the small Japanese peasant farmers to use as manure. The organic remains in the deposit are those of marine invertebrates.

DR. W. L. ABBOT, of Philadelphia, who has made valuable donations to the Smithsonian Institution, has now given a collection of birds from the Malayan peninsula containing 1,100 birds representing over 200 species.

STANFORD UNIVERSITY has been given by the brother of the late Senator Stanford, now residing in Australia, a collection of books relating to Australia, including especially works on the geography, geology and anthropology. It consists of 2,500 bound volumes and 3,000 pamphlets.

MR. FORTESQUE FLANNERY, M. P., has announced his intention to move in the House of Commons: "That in the opinion of the House it is desirable that a department of public health be constituted and that the same be under the charge of a responsible Minister having a seat in Parliament."

A COMMITTEE, consisting of Lord Crawford, Sir Edward Thompson, Sir Benjamin Stone, Professor Meldola, Captain Abney and others, has been appointed for the purpose of forming a National Photographic Record Association, the object of which is to be the collecting and making photographic historical records of the British Isles.

AN International Congress is being arranged at Paris for the discussion of the means of preventing fires in theatres and other places of public resort.

THE New York *Evening Post* states that an extensive robbery of art works and other articles of great value has taken place at the museum of the Canton of Vaud. The museum is located in the College near the Cathedral of Lausanne, and contains natural-history collections from Aventicum and Vidy, the ancient Lausanne, and interesting antiquities from lake-dwellings, coins, medals, etc. It also contains the Cantonal Library of 60,000 volumes.

A CURIOUS robbery has occurred in Paris, a number of rabbits inoculated with the germs of diphtheria, cholera, typhus, etc., having been stolen from the Aubervilliers Hospital. These are thought to have been sold to dealers, and there was a general panic in Paris among those who had eaten rabbit!

THE British Home Office will only allow five pounds of carbide of calcium to be kept without a license. It must then be kept in separate, substantial, hermetically closed metal vessels containing not more than one pound each.

THE New York State Commission on Voting Machines, consisting of Philip T. Dodge, Professor R. H. Thurston and Mr. H. de B. Parsons, held their first meeting at Albany on July 10th, for the examination of machines to be adopted by the State.

ARRANGEMENTS have been made in Boston to give members of the fire department instruction in the nature of electricity and the uses of electrical appliances.

A NEW fire-proof building will be erected for the collections of the Pathological Institute at the University at Berlin.

At its meeting in Washington in May, 1897, the American Physiological Society appointed a committee to consider whether the time had come for the publication of an American Journal of Physiology. The committee have reported in favor of the plan and it will undoubtedly be adopted at the next meeting of the Society. The journal, which will be devoted to investigations in physiology and allied sciences, will probably begin publication in January next and will be edited by a committee of the Society, with Dr. W. T. Porter, Harvard Medical School, as Secretary.

THE *American Naturalist* has been purchased

from the estate of the late Professor Edward D. Cope and will, beginning with the next number, be edited by Dr. Robert P. Bigelow, instructor in biology in the Massachusetts Institute of Technology, assisted by an editorial committee and a board of associate editors whose names are not yet announced.

THE Zoological Society of Tokyo has begun the publication of *Annotationes Zoologicae Japonensis*, under the editorship of Professor K. Mitsukuri, intended for contributions shorter than those contained in the Journal of the University. Professor Mitsukuri contributes an interesting introduction on the development of zoology in Japan, making due acknowledgment of the great services of Professors Morse and Whitman.

WE have received the first number of the second volume of the Bulletin of the Pará Museum of Natural History and Ethnology. The number, published in May of the present year, is largely devoted to the somewhat belated report of the director, Dr. Emilis A. Goldi, for 1895. There are attached to the museum a Zoological Garden and a Botanical Garden, a Library and a Meteorological Bureau. Numerous additions to these various institutions are reported during the year, the annual appropriation for the museum in 1895 being \$70,000, and \$12,000 each for the zoological and botanical gardens. The museum is visited daily by between 500 and 600 persons. The Bulletin further contains an account of an expedition, chiefly for archæological research on the Rio Maracá by A. P. de Lima Guedes, and four scientific papers.

THE manuscripts of the late Julius Sachs, the eminent botanist, will be edited by Professor Noll, of Bonn.

D. APPLETON & Co. announce that they will have ready for publication in the autumn the biography of Huxley prepared by his son.

LONGMANS, GREEN & Co. will shortly publish a new edition of 'Ancient Stone Implements, Weapons, and Ornaments of Great Britain' by Sir John Evans, President of the British Association. The work will be thoroughly revised, as much new material has been dis-

covered since the first edition was published in 1872.

THE Civil Tribunal at Paris dismissed, on July 22d, the claim for 5,000f. damages preferred by the publisher of the French translation of Dr. Nansen's book against the *Correspondant*, in which Mme. Marie Dronsart reviewed Dr. Nansen's career and gave many extracts from the English version of his book.

PROFESSOR R. LYDEKKER contributes to the issue of *Nature* for July 15th an extended article entitled 'Species and Subspecies,' based upon the articles contributed to this JOURNAL by the Hon. Theodore Roosevelt and Dr. C. Hart Merriam. Professor Lydekker concludes his article with the following suggestion: "The question of the distinction between species and subspecies is undoubtedly one bristling with difficulties, and it is therefore one which in many cases is incapable of being definitely settled by an individual opinion. Although personally convinced of the advisability of using specific names in a wide sense, and employing trinomials for the designation of the nearly related forms, it may be suggested that an international committee of zoologists should be formed to discuss the question in all its bearings. Needless to say, such a committee should include representatives of both the 'splitting' and 'lumping' interests; and if the points at issue were fairly debated, with a full determination to give and take on both sides, it is difficult to believe that a working compromise between the extreme views could not be arranged. Almost anything is better than the present condition of uncertainty and discrepancy."

THE Plague Commission sent by the Austrian government to Bombay to study the disease has presented a provisional report to the Vienna Academy of Science. According to the *British Medical Journal* the Commissioners state that they had opportunities of investigating the plague clinically in 70 cases, and that they had opportunities of making pathological and bacteriological investigations on 47 bodies of persons who had died of the disease. Pathologically they say that three forms of plague can be distinguished: a septicæmic-hæmorrhagic

form, in which the whole lymphatic apparatus appears to be diseased in a peculiar manner; a septico-pyæmic form, with metastases to internal organs; and primary plague-pneumonia, a lobular pneumonia with quite characteristic appearances. The mode of entrance of the infection seems mostly to be the skin, more rarely the lungs and the tonsils, never the intestinal canal. The Yersin-Kitasato bacillus is certainly the exciting cause of the disease; it can be obtained pure from the organs as well as from the blood. The Commissioners were unable to satisfy themselves that Haffkine's serum injections had any effect. They considered it improbable that the plague could find a footing in Europe.

THE commission on the plague under the direction of Professor Koch has also issued its report. It states, according to the *London Times*, that the plague bacillus outside the human body or certain animals has very brief vitality. Pure cultures with which experiments were made were killed by sublimates at boiling temperature immediately, by mineral acids in five minutes, by a solution of 1 per cent. of carbolic acid in ten minutes, and by milk of lime exposed to sunlight in one hour. The duration of the life of the bacillus was found to be from eight to ten days at the most. Rats were found to be in the highest degree susceptible and to be spreading the plague germs and communicating them to human beings. For experiments on immunity Yersin serum was used with apes. Its protective power in the case of brown apes did not exceed eight days. Strong injections of serum proved to be of unquestionable curative efficacy. Haffkine's system of inoculation, which was applied to 1,400 patients, is said, contrary to the report of the Austrian Commission quoted above, to have showed undoubted protective results, although a number of the patients were taken ill in consequence of the inoculation.

REGULATIONS have been issued by the German government for the sale of Professor Koch's new tuberculin, under which name the new specific will be sold by chemists in phials containing one millilitre at Marks 8.50 and in phials containing five millilitres at Marks 42.50. The tuberculin will only be given to certified

medical men or to those provided with an authorization from such.

A RESOLUTION has been submitted to the municipal council of Paris requiring families to furnish every two months a medical certificate stating that infants under one year have been cared for in accordance with hygienic rules.

UNIVERSITY AND EDUCATIONAL NEWS.

THE full text of the government bill with respect to the University of London is published in the issue of the *Times* for July 24th. The Commissioners are Lord Davey, Dr. Mandell, Lord Bishop of London, Lord Lister, Sir William Roberts, M.D., Sir Owen Roberts, Professor Jebb and Mr. E. H. Busk. The Commissioners are required to make statutes and regulations for the University of London in general accordance with the recommendations of the Cowper Commission. The Commissioners are to be superseded at the end of 1898 by a Senate of the University consisting of the Chancellor and other representative members. The Senate has entire conduct of the University, it only being provided that:

(a) No religious test shall be adopted, and no applicant for a University appointment shall be at any disadvantage on the ground of religious opinions;

(b) No procedure to a higher degree shall be allowed without examination or other adequate test, nor shall any honorary or *ad eundem* degree be conferred unless the Senate, in exceptional cases, think fit to confer such a degree on a teacher of the University;

(c) No disability shall be imposed on the ground of sex.

A LAW passed by the last Legislature of the State of Illinois appropriated to the State University the sum of \$456,000, lost to the University by the defalcation of the former Treasurer.

THE faculty of sciences of the University of Paris has been authorized to give a certificate for higher studies in physical geography.

A NEW technical school at Northwich, built by Sir Joseph Verdin at a cost of £12,000, was formerly opened on July 24th.

IT is proposed to establish at Shanghai a university for the education of the Chinese in Western art, science and literature.